

Application No.: 10/823,244

Docket No.: JCLA12737

REMARKS**BEST AVAILABLE COPY**Present Status of the Application

The Office Action rejected claims 1-9 under 35 U.S.C. 102(b), as being anticipated by Russ et al. (U.S. 2003/0047750). Claims 10-17 are objected to because a wording correction is required. Claims 10-17 are allowed subjected to removal of said objection.

Applicant has amended claim 1 to more clearly define the invention.

Applicant has amended claim 10. After entry of the amendment of claim 10, claims 10-17 should be allowed because of the removal of the objection.

After entry of the foregoing amendments, claims 1-17 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Office Action Objections

Claims 10-17 are objected to because a wording correction is required. Applicant has amended "a plurality of second conductive type doped regions formed in the first conductive type shallow well and the second conductive type deep well" to "a plurality of second conductive type doped regions formed in the second conductive type deep well and one second conductive type doped region formed in the first conductive type shallow well" in claim 10.

After entry of the amendment of claim 10, claims 10-17 should be allowed because of the removal of the objection.

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**Discussion of Office Action Rejections**

*Applicant respectfully traverses the 102(b) rejection of claims 1-9 because Russ et al. (U.S. 2003/0047750) does not teach every element recited in these claims.*

In order to properly anticipate Applicants' claimed invention under 35 U.S.C 102, each and every element of claim in issue must be found, "either expressly or inherently described, in a single prior art reference". "The identical invention must be shown in as complete details as is contained in the ... claim. Richardson v. Suzuki Motor Co., 868 F. 2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." See M.P.E.P. 2131, 8<sup>th</sup> ed., 2001.

The present invention is in general related a junction diode as claim 1 recites:

Claim 1. A junction diode, comprising:  
a first conductive type substrate;  
a second conductive type embedded region, formed within the first conductive type substrate;  
a second conductive type well, formed within the second conductive type embedded region, wherein the second conductive type well has a dopant concentration smaller than the second conductive type embedded region, and the second conductive type embedded region surrounds the second conductive type well, ***wherein the second conductive type embedded region surrounding the second conductive type well has an identical dopant concentration;***  
a first conductive type doped region, formed in the second conductive type well; and  
at least two second conductive type doped regions, formed in the second conductive type embedded region beside the first conductive type doped region.

Russ fails to disclose, teach or suggest the second conductive type embedded region surrounding the second conductive type well has an identical dopant concentration. In Russ's reference, the device, as shown in Fig. 2, includes a p-substrate 203, a buried layer N-type 205, an N-epitaxial layer 208, P+ region 212 and N+ regions 210<sub>1</sub> and 210<sub>2</sub>. The N-epitaxial layer 208 is surrounded by the buried layer N-type 205 and the N+ sinkers 206<sub>1</sub> and 206<sub>2</sub>, wherein the

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buried layer N-type 205 is located at the bottom of the N-epitaxial layer 208 while the two N<sup>+</sup> sinkers 206<sub>1</sub> and 206<sub>2</sub> are located at two sidewalls of the N-epitaxial layer 208. In particular, the buried layer N-type 205 has a doping concentration of 2E19 atoms/cm<sup>-3</sup> (paragraph [0033]) while the N<sup>+</sup> sinkers 206<sub>1</sub> and 206<sub>2</sub> have a doping concentration of 10<sup>18</sup> atoms/cm<sup>-3</sup> (paragraph [0034]). Therefore, the doping concentration of the N<sup>+</sup> sinkers 206<sub>1</sub> and 206<sub>2</sub> is different from that of the buried layer N-type 205. However, in claim 1 of the present invention, the second conductive type embedded region surrounding the second conductive type well has an identical dopant concentration. Russ does not teach or suggest said feature. Therefore, Dikeman does not teach every element recited in claim 1.

For at least the foregoing reasons, Applicant respectfully submits that independent claim 1 patently define over the prior art reference, and should be allowed. For at least the same reasons, dependent claims 2-9 patently define over the prior art as a matter of law, for at least the reason that these dependent claims contain all features of their respective independent claim 1.

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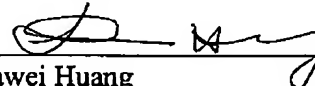
**CONCLUSION**

For at least the foregoing reasons, it is believed that the pending claims 1-17 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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4 Venture, Suite 250  
Irvine, CA 92618  
Tel.: (949) 660-0761  
Fax: (949)-660-0809

Respectfully submitted,  
J.C. PATENTS

  
Jiawei Huang  
Registration No. 43,330